

CROSSING SAFETY IMPROVEMENT PROGRAM

FY 2004-2008 Plan

PROPOSED GRADE CROSSING PROTECTION FUND
PROJECTS FOR LOCAL ROADS AND STREETS

ILLINOIS COMMERCE COMMISSION
APRIL, 2003

INTRODUCTION

The Illinois Commerce Commission has the statutory responsibility to improve safety at public railroad/highway crossings in the State of Illinois. Currently, there are 8,570 grade level crossings in Illinois, of which 852 are on state roads, and 7,718 are on local roads. There are 2,739 grade-separated crossings (bridges) in the state. Another 4,760 grade crossings are on private property, which are not under the jurisdiction of the state, and there are also 163 private bridge structures. There are also 275 pedestrian grade crossings and 76 pedestrian grade separated crossings (bridges) in Illinois. Nationally, Illinois is second only to Texas in the total number of railroad crossings. Table A summarizes the distribution of grade crossings by type and position.

Table A
Illinois Crossings

Crossing Type	Crossing Position	Crossings
Public Roadway	At Grade	8,570
	RR Over	1,825
	RR Under	914
Pedestrian Pathway	At Grade	275
	RR Over	54
	RR Under	22
Total		11,660

The Commission orders improvements on public crossings with the cost of such improvements borne by the state, the railroads, and local governments. On state roads, the Illinois Department of Transportation (IDOT) pays the majority of the costs through the State Road Fund. For local roads, the legislature created the Grade Crossing Protection Fund (Fund) to bear the majority of the costs of improvements.

RAILROAD CROSSING SAFETY — THE THREE E's

Illinois is one of the key transportation hubs in the nation. With over 7,300 miles of railroad track, its rail system is the country's second largest, including the largest rail freight hub in Chicago. Illinois has the nation's third largest highway system, with 139,744 miles of highways, streets and roads and 25,529 bridges.

Both the rail and highway systems are among the most heavily used in the nation in terms of volume of traffic, with much of the traffic concentrated in the Chicago metropolitan region. There, the urban mass transit system serves an average of nearly 600 million passengers a year over an extensive network of bus and rail routes.

Keeping the grade crossing portion of this transportation network operating safely and efficiently involves local, state and federal governments as well as the private sector. These safety efforts can be summarized as the Three E's — **Education, Engineering and Enforcement.**

Education: The Commerce Commission is actively involved in developing programs to educate the public about the danger at grade crossings. One example of this public education program is the ICC's participation in Operation Lifesaver. The Operation Lifesaver program is a public-private partnership designed to increase public awareness of highway-rail grade crossing hazards. It also strives to improve driver and pedestrian behavior at railroad crossings by encouraging compliance with traffic laws relating to crossing signs and signals.

Enforcement: Enforcement of existing traffic and trespass laws is key, especially the issuance of fines (up to \$500) or community service to persons crossing railroad tracks after the warning signals have activated.

Engineering: Grade crossing safety improvements are also critical to reducing collisions. The Commission orders physical and system improvements, including the installation and upgrading of grade crossing warning signs and signals and, where warranted, grade separations. While education and enforcement are absolutely essential, the focus of this report is the engineering of capital improvements to further railroad crossing safety on local roads.

2002 IN REVIEW - Collision and Fatality Rates

In 2002, there were a total of 155 collisions at public crossings in Illinois, an 18% reduction compared to 2001 figures, and a record year for fewest crossing collisions with the next closest year being 1999 when there were 176). National figures for 2002 indicate 2,471 collisions occurred through November 30, compared to 2,591 for the same period in 2001, which is a 4.6 percent decrease. As can be seen from the following charts, the trend both nationally and in Illinois is a steady decrease in collisions.

The general public commonly thinks of grade crossing collisions as involving trains colliding with cars, and in a majority of incidents that is the case. However, each year a substantial number of collisions involve motor vehicles driving into the sides of trains. In 2002 over 28 percent (28%) of all collisions involved cars driving into the sides of trains, a percentage which has remained fairly constant over the years. The 40 vehicle-train collisions in 2002 resulted in four fatalities and 21 injuries.

Total fatalities resulting from collisions at highway-rail crossings in Illinois decreased from 29 in 2001 to 23 in 2002. Fatality statistics, however, are not a particularly good measure of safety. Fatalities are a function of random events, such as how many occupants were riding in a car involved in a collision, or multiple fatalities involved in the same incident (as in the death of eleven passengers involved in the Amtrak/steel truck collision that occurred near Bourbonnais, in 1999). Table B illustrates the distribution of fatalities by collision type in 2002.

Table B
Illinois Highway/Rail Grade Crossing Collisions

Notes:

1. There were 4 multiple fatal collisions in 2002;
2. One incident resulted in five (5) fatalities, while three incidents each resulted in two (2) fatalities.

RAILROAD CROSSING SAFETY FUNDING

The Grade Crossing Protection Fund (Fund), appropriated to the Illinois Department of Transportation but administered by the Illinois Commerce Commission, was created by the General Assembly to assist local jurisdictions (counties, townships and municipalities) in paying for safety improvements at railroad crossings on local roads. Assistance from the Fund cannot be used for crossing safety improvements on the state road or highway system. Those improvements are funded directly by the Illinois Department of Transportation. Each month \$2.25 million in state motor fuel tax receipts is transferred from the motor fuel tax fund to the Grade Crossing Protection Fund. This amount provides the Fund with \$27 million annually to be used for safety improvements at highway/rail crossings on local roads and streets. The Fund is typically used to help pay for the following types of projects:

- **Warning device upgrades:** Installation of automatic flashing light signals and gates at public grade crossings currently not equipped with automatic warning devices; installation of automatic flashing light signals and gates at public grade crossings currently equipped only with automatic flashing light signals; signal circuitry improvements at public grade crossings currently equipped only with automatic warning devices;

- **Grade separations - new and reconstructed:** Construction, reconstruction, or repair of bridges carrying a local road or street over railroad tracks (overpass); construction, reconstruction, or repair of bridges carrying railroad tracks over a local road or street (subway);
- **Grade separations - Vertical Clearance improvements:** Lowering the existing highway pavement surface under a railroad bridge to improve vertical clearance for motor vehicles;
- **Pedestrian grade separations:** Construction of a bridge to carry pedestrian/bicycle traffic over or under railroad tracks;
- **Interconnects:** Upgrading the circuitry at grade crossings where warning signals are connected to the adjacent traffic signals so that the two systems operate in a synchronized manner;
- **Approaches:** Improvements to the portion of the public roadway directly adjacent to the crossing surface;
- **Connecting roads:** Construction of a roadway between a closed crossing and an adjacent open, improved crossing; and
- **Remote monitoring devices:** Sensor devices in the circuitry of grade crossing warning devices which immediately alert the railroad to any failures in warning device operations
- **Low Cost Improvements at Unsignalized Crossings:** Installation of new, more reflective crossbuck warning signs and YIELD signs at crossings that do not require automatic warning devices.

The cost of railroad crossing safety improvements varies substantially depending on the nature of the work undertaken. A standard installation of gates with automatic flashing light signals on a two-lane road typically costs approximately \$150,000. Additional costs for road improvements could typically range from \$2,000 to \$25,000 depending on the road type and location. Grade separation structures are very costly. A pavement lowering project can cost \$350,000 - \$1 million, while a new underpass could cost as much as \$10 million. Bridges over railroads can cost from \$400,000 for a rural structure to \$40 million for a multi-lane multi-railroad urban structure. Typically, the Fund pays up to 60% of the cost for grade separation projects and 85% to 95% for grade crossing improvements, although Commission policy is to allocate no more than \$12 million of Grade Crossing Protection Funds to any individual project unless unusual circumstances warrant. When the numbers of crossings needing improvement are multiplied by project costs, the problem of allocating sufficient assistance from the Grade Crossing Protection Fund becomes apparent.

CROSSING SAFETY IMPROVEMENT PROJECTS

This report presents the railroad crossing safety capital improvements the Commerce Commission staff proposes to implement during FY 2004 and also looks ahead to the projects contemplated for the years FY 2005 - FY 2008. In all cases it is assumed that any required local funding match will be available. In some cases local

funding may not be available during the same fiscal year in which a crossing improvement has been programmed. In those circumstances the Commission will move the project to another fiscal year to accommodate the local agency.

The project list for Fiscal Year (FY) 2004 (July 1, 2003 through June 30, 2004) includes capital improvement projects that local governments or railroads have previously submitted to the Commission for evaluation and approval, as well as projects based on established priorities. The project list for FY 2005-2008 (out-year list) include projects based on a continued effort to meet those established priorities:

- High Collision History - Each year the Commission places a high priority on upgrading public highway/rail grade crossings which have a pronounced history of train/vehicle collisions, or which have a high predictive value for future collisions. The FY 2004-2008 Plan will address safety improvements at as many of these crossing locations as possible.
- Rail Corridors - The Commission has identified as a priority the need to improve public highway/rail grade crossings in rail corridors where conventional speed passenger trains operate.
- Highway and Pedestrian Grade Separations (Bridges) - The Commission is continually seeking locations where grade crossing blockages cause substantial motorist or emergency vehicle delay, or where heavy vehicular traffic represents a heightened threat of train/vehicle collisions. This Program includes funding assistance for numerous highway/rail bridge projects on local roads and streets throughout the state.

Recently, the General Assembly gave the Commission authority to utilize the Grade Crossing Protection Fund to assist local communities with the cost of constructing pedestrian grade separations in areas where it is necessary to improve safety. This Program includes funding assistance for several pedway/rail bridge projects throughout the state.

- Interconnected Crossings - The Commission and IDOT are continuing a program to identify and improve highway/rail grade crossings that require the interconnection of crossing warning signals with traffic control signals at adjacent highway intersections.

Program Note: On January 13, 2000, the Federal Railroad Administration (FRA) issued a Notice of Proposed Rule making to implement the 1994 Swift Rail Act. This federal law and proposed rule would require that all trains sound their horns at all grade crossings, unless supplemental safety measures are installed at those crossings. It is anticipated that the FRA may issue its rule sometime during calendar year 2003. Pending the outcome of the rulemaking, the program themes articulated here could be revised. The Commission anticipates enactment of the Train Horn Rule will create an increased level of requests for GCPF assistance from local communities to help pay for crossing safety improvements required to create qualified Quiet Zones.

FY 2004 PLAN

Projects programmed for submittal to the Commission in FY 2004 are listed in Appendix 1. In FY 2004 it is anticipated the Commission will consider projects requiring commitments from the Grade Crossing Protection Fund totaling over \$27 million, including over \$21 million for crossing separations.

In FY 2004, the Commission will also set aside approximately \$3 million in contingency funds to address emergency projects, which may require rapid resolution, and experimental crossing safety projects. These projects are summarized in Table C.

TABLE C		
FY 2004 Projects by Project Type		
Total Est. Assistance from the Grade Crossing Protection Fund		
<u>PROJECT TYPE</u>	<u>CROSSINGS</u>	<u>\$MILLIONS</u>
Bridge Projects	6	4.7
Grade Crossing Improvement Projects	39	5.5
Remote Monitors	N/A ¹	1.0
Interconnects	1	0.2
Experimental/Emergency Safety Improvements	N/A	1.0
Progress Payments for Bridge Projects previously Ordered by the Commission	3	14.7
¹ The number of crossings where remote monitors will be installed has not yet been determined for FY 2004		
Total	49	27.1

NOTE: At the time the FY 2004 portion of the Plan was prepared, funds were available for each project noted in Appendix 1. However Grade Crossing Protection Fund assistance may cease for certain projects should the General Assembly fail to appropriate or otherwise not make available sufficient funds.

FY 2005 - 2008 PLAN

Projects programmed for submittal to the Commission in FY 2005-2008 are listed in Appendix 2. For those four years, it is anticipated the Commission will consider projects requiring commitments from the Grade Crossing Protection Fund totaling over \$109 million, affecting more than 1,600 crossings in over 60 counties.

TABLE D		
FY 2005-8 Projects by Project Type		
Total Est. Assistance from the Grade Crossing Protection Fund		
<u>PROJECT TYPE</u>	<u>CROSSINGS</u>	<u>\$MILLIONS</u>
Bridge Projects	28	30.0

Grade Crossing Improvement Projects	181	28.6
Remote Monitors	N/A ¹	5.0
Experimental/Emergency Safety Improvements	N/A	4.0
Progress Payments for Bridge Projects previously Ordered by the Commission	18	41.5
¹ The number of crossings where remote monitors will be installed has not yet been determined for FY 2005-2008		
Totals	227	109.1

NOTE: At the time the FY 2005-2008 portion of the Plan was prepared, funds were available for each project noted in Appendix 2. However Grade Crossing Protection Fund assistance may cease for certain projects should the General Assembly fail to appropriate or otherwise not make available sufficient funds.

ACTIVE PROJECTS

The Commission has approved nearly 182 active improvement projects, involving nearly 1400 crossings in 76 counties throughout the state. These projects are summarized in Table E below. Appendix 3 lists each individual project with specific location and cost information.

TABLE E		
Active Projects by Project Type		
Amount of Grade Crossing Protection Fund Assistance		
<u>PROJECT TYPE</u>	<u>CROSSINGS</u>	<u>\$MILLIONS</u>
Bridge Projects	32	51.2
Grade Crossing Improvement Projects	202	29.1
Remote Monitors	983	3.0
Interconnects	13	4.5
Experimental/Emergency Safety Improvements ¹	150	0.8
¹ - Video Enforcement, Automatic Horn System, Vehicle Detection, Crossbuck Sign Renewal)		
Totals	1,380	88.6